

New tool for
field crews

Wildfire
mitigation

Value of
mentoring

Psychological
safety

• CLOSED • Circuit

WESTERN AREA POWER ADMINISTRATION

FEBRUARY 2022

**Building
resilience**



CLOSED Circuit

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On the cover

Placed into service in 1963, Flaming Gorge Dam on the Green River is part of the Salt Lake City Area/Integrated Projects. It has an installed capacity of 152 megawatts. (Photo by **Alexander Stephens**)





New tool saves time, improves inspections

By Leah Shapiro

Lineman *Dave Horton* inspects a structure along a portion of the Carr-to-Keswick line in Shasta County, California, using a new application that more easily and efficiently captures structure condition information. (Photo by Dave Horton)

Last month, WAPA launched a new tool that, according to Executive Vice President and Chief Operating Officer **Kevin Howard**, will “enable us to more effectively monitor the health of our transmission system and efficiently react to condition issues while continuing to maintain the high level of reliability we have always achieved.”

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The tool, IQGeo, is geospatial productivity and collaboration software that field employees use to record transmission line condition and any vegetation or right-of-way concerns as they conduct annual ground and aerial patrols of WAPA's 17,000+ miles of line.

As they look at each structure, they log any deficiencies they see, such as a cracked crossarm or a chipped bell. They assign the structure a rating, from A to E, depending on its condition. They also log each structure they've inspected to ensure they capture the entire system during the year.

ABCs of structure rating

Structure ratings help crews plan and prioritize their work throughout the year.

- A: Good or like new. No action required.
- B: Minor defect. Monitor degradation.
- C: Moderate defect. Rehabilitation or replacement recommended as scheduled maintenance.
- D: Serious defect. Repair, reinforce or replace as soon as possible.
- E: Risk to public safety or system reliability.

IQGeo allows crews to capture this information more quickly and easily. It replaces a tool that WAPA had been using since the early 2010s and offers increased functionality.

"It automatically pulls up the structure as you get close to it and shows all the information we have about that particular structure," said Lineman **Drew Tierney**. "We used to have to enter that type of information manually."

The base functionality of IQGeo gives crews a large amount of data that they didn't have before.

"It shows the previous rating and deficiency details, so they know to look for certain things," said Information Technology Project Manager **Christine Hale**. "With a simple query, they can pull up

Maintenance information on a particular line, structure or area. This alone is going to save crews lots of time, and there are additional benefits as well. IQGeo uses technology similar to geofencing. It detects where the lineman is, and when they are in proximity of a structure it automatically opens the structure form with pre-populated fields."

The program will aid field employees performing both ground and aerial patrols.

"As they fly down the line, the application will show them the structure number and rating, and can mark each structure as inspected," Hale explained.

"I'm excited to see what it does with aerial, the way it will log us as we go," said Supervisory Maintenance Specialist **Russ Barnett**. "It's going to save us so much time."

Regarding benefits for ground crews, Hale provided the example that a lineman who is driving in North Dakota from Bismarck to Fargo could see if there was anything that needed to be inspected or addressed along the way.

The program ties together all the data for any particular structure, "so crews can see a holistic view of structure health," said Hale.

Cloud improves availability

Beyond its capabilities in the field, IQGeo is notable behind the scenes as well.

"This was the only software vendor we talked to that had experience deploying their software in the cloud," said Supervisory IT Specialist **Tonya Spencer**. "Not only is it hosted in the cloud; it's the first application to be deployed and hosted in WAPA's Amazon Web Services cloud."

One benefit of this is that it gives crews access to the program — and all of the incorporated data — through an internet connection. They don't have to be connected to WAPA's VPN.

"As soon as they have service, data will securely travel over any network that's available," said Enterprise Architect **David Tucker**. "This is one of WAPA's first steps in moving applica-

tions to the cloud for better performance, reliability and availability."

There are technical benefits as well.

"Because it's hosted in the cloud, we didn't have to buy new hardware," Tucker explained. "All its storage, compute power and application functionality is in the cloud, not in WAPA's data center."

"WAPA is embracing the cloud where it makes the most sense," said Senior Vice President and Chief Information Officer **Mike Montoya**. "We're doing it strategically and methodically to ensure that we leverage the most benefit. We don't want to wait until we are forced to move; we're doing it on our terms."

Performance matters

The tool being replaced by IQGeo was implemented in the early 2010s and was the first transmission-line inspection tool to be used WAPA-wide.

"It wasn't the perfect tool, but it was a big step at the time," said Barnett. "Before it, crews and regions were doing things differently, some with paper and pencil and some on various computer programs. There was no consistency."

As WAPA stood up its Asset Management program and started looking to make data-driven decisions, this became more of an issue.

"That tool provided a consistent approach for transmission line component inspection," said Vice President of Transmission Asset Management **Chris Lyles**. "Everybody could use the same inspection criteria and rating system, which produces consistent health and risk scoring. And with that comes a way for WAPA to better prioritize transmission line projects across regions."

Over time however, support for the application began to wane.

"Around 2019, multiple issues popped up, and that's what started us looking for a possible replacement," Spencer said. "Data was being lost. Users had to reinspect some lines."

There were latency issues as well. When crews would push a button, there was a delay with every click.

"This is what I'm most excited about," offered Tierney, explaining that



As part of the market research to identify an improved transmission line inspection tool, staff from WAPA's Maintenance, Information Technology and Asset Management programs watch a live demonstration in Las Vegas. (Photo by Tonya Spencer)

in addition to IQGeo being faster, it requires fewer clicks all around when conducting an inspection.

"It was a big deal," said Hale. "We're exponentially reducing the time it takes to do each inspection and, when talking about more than 100,000 structures, it adds up."

The system was also taking an inordinate amount of time to upload

and download data for inspections. Sometimes it was hours.

"When you're planning your 10-hour day to get your crew out in the field, if it takes three hours to download the information you need, that cuts into work time," Barnett said.

"There is a very real cost to that loss of time," said Hale.

In November 2019, IT personnel met with craft employees from all regions to discuss the idea of moving to a more state-of-the-art tool. They conducted market research, which included attending a conference where they received in-depth demonstrations of several products.

"Getting involved at that level, that kicked it off for me," said Barnett. "From that point, I felt comfortable and invested. I knew I could have a voice in what they were putting together."

Partnership provides path forward

In May 2020, the team decided to replace the previous tool. "We kicked off the project with the goal of implementing a new tool in early January 2022," Spencer said.

"It had to be January," Barnett added. "The inspection year kicks off in January and there was no way we could switch to a new tool in the middle of a year."

The core project team included people from five IT functions, Asset Management and Maintenance. Though it was an IT-led project, the end users are field employees. It was essential that whatever product was chosen would meet their needs.

"Our goal was always to deliver a product—on time—that would make inspections easier and faster," Hale emphasized, "and we didn't want to lose any functionality."

Maintenance representatives were involved in the design calls and testing, reviewed form templates and had opportunities to speak directly with the vendor about their needs.

"Linemen aren't computer experts, so I sat back a bit, but Christine often pulled me in, asking for my opinion," Barnett said. "The best value I think I offered was around the helicopter work, explaining how those patrols are conducted and what we could do safely."

"This type of partnership is what we expect with all our IT projects," said Vice President of IT – Enterprise Applications **Joe Fast**. "We are strategic partners and consultants in delivering solutions that improve a process, work better for the users and make the most sense for WAPA."

“We are strategic partners and consultants in delivering solutions that improve a process, work better for the users and make the most sense for WAPA.”

The procurement process began in January 2021 and was awarded in May, not allowing much time before the go-live date of January 2022.

That wasn't the only challenge. "Resource loss and attrition on the vendor's development team also affected our timeline," Hale said.

Additionally, work had to be done with the Department of Energy to navigate their processes for implementing the software in WAPA's cloud tenant.

Late in the project, the vendor "wanted a specific deployment and it simply wasn't working," said Hale. "People on the WAPA side, our cloud people, changed the environmental architecture, pulling it off in two business weeks over Thanksgiving."

She asserted that had they not gotten that done, there was no way the project would have gone live on time.

"With all the challenges, testing didn't begin in earnest until December," Hale added.

Once the application was up and running, meeting all requirements, it was time to train field employees to use it. There was only one week for training before the project deadline. Hale conducted the training via Teams for about 150 people in five four-hour sessions between Jan. 3-7.

"We walked through every aspect of the program," said Hale. "Then we pushed them to go out to the field, inspect some structures and let us know about its performance so we could identify any bugs that need to be worked out."

"We held follow-up sessions to hear how it went and address any issues," Spencer added.

Using this new tool is a significant change.

"It will take some time to learn the program and get comfortable with it, but I know it will become second nature," said Barnett. "We had influence in choosing the tool, so ultimately we have buy in."

Innovate, improve, repeat

Both Hale and Spencer admitted that there were many times in the last few months of the project that they weren't sure they would be able to meet the deadline.

"This was a complex project with a short timeline, and it took everyone to make it happen," said Hale. "Ultimately, we were able to release a product that works and works well at our original planned date."

Though the tool is live, the project will continue.

"We'll be spending time reviewing any defects and continuing to improve," said Hale. There are also plans for a second release over the next few months, which will introduce further improvements.

"We now have a more reliable tool that will save us time and make some parts of the patrol easier," said Tierney. "It will help us be more efficient with planning, too."

At the end of the day, it all comes back to the mission.

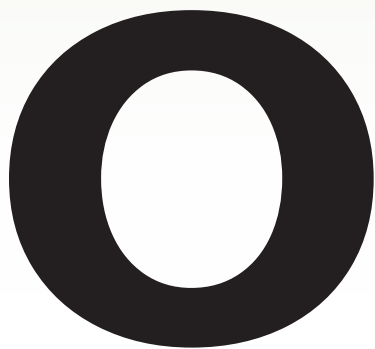
"The backbone of WAPA's system is its 17,000 miles of transmission lines," said Howard. "Without reliable transmission, we would not be able to meet our mission. This effort will help us manage our rates and continue to provide affordable, reliable service to our customers." □

Note: The author is a management and program analyst.

Core project team

- IT Specialist **Brian Avis**
- Supervisory Maintenance Specialist **Russ Barnett**
- Program Analyst **Valerie Berk**
- IT Specialist **Steven DeRidder**
- IT Project Manager **Christine Hale**
- Lead Information Technology Specialist **Jane Harrell**
- IT Specialist **Satpal Kalsi**
- IT Specialist **Max Pitard**
- IT Specialist **John Posten**
- IT Specialist **Jason Sporer**
- Quality Assurance Services **Jennifer Tardif**
- Geographer **Eric Weisbender**

ICG launches Open Mic



On Dec. 2, the Integrated Communications Group hosted the debut session of Open Mic, an opportunity for employees to gather virtually and learn more about various aspects of WAPA's operations.



The hourlong event, "What Does a Dispatcher Do?" featured Power System Dispatcher Trainer **Brian Graybeal**. Graybeal's 23-year career includes working around the world in power operations and maintenance for the U.S. Army. He has worked at WAPA for eight years, and he spoke about his experiences in Dispatch.

Across WAPA's 15-state footprint, 135 dispatchers work tirelessly – most of them for 12-hour shifts – to ensure that the lights stay on. Each of them is assigned one of four functions, which in turn have unique roles in keeping the federal transmission system running reliably: balancing, interchange, transmission and real-time engineering.

The work of a dispatcher is 99% routine, but the remaining 1% of the time requires quick thinking and critical decisions to be made. This was the backbone of the presentation, with Graybeal outlining the "normal" experience of a dispatcher, the developments for which they must always be prepared and the ways in which they prepare for them.

"Brian's presentation was a perfect example of what we wish to achieve with these Open Mic events," said Chief Public Affairs Officer **Teresa Waugh**, who leads the ICG. "We have some incredible employees at WAPA who perform remarkable work every day, but we don't always understand what's involved in that work."

She explained that with a wide range of job functions and expertise throughout the organization, it's possible to understand a lot about WAPA and still not understand most of what happens.

"The Open Mic events are intended to bridge that knowledge gap," Waugh continued. "If you're able to attend the live broadcasts, you can learn about these important roles within WAPA and have your questions answered directly. If you're not, you can tune in afterward and learn just as much."

This inaugural event was hosted by Rocky Mountain Vice President of Transmission Service **Pete Heiman**. In addition to Graybeal's presentation, Auditor **Lisa O'Brien** facilitated employee Q&A and Vice President of Technical Services **Steve Yexley** spoke briefly about the Electric Power Training Center and its role in preparing dispatchers for their important work on the grid.

The event was a success, with more than 350 employees tuning in live and another 150 watching the presentation afterward.

"It was a great event and it exceeded our expectations," said Waugh. "The ICG is very happy with how it turned out, and we could not have asked for a better debut than Brian gave us."

She emphasized that employees would see more events of this type in 2022.

"One small advantage of the pandemic is that it's gotten employees more comfortable with attending events like this remotely," she said. "That makes Open Mic and similar ideas more feasible. It's a learning process, as always, but with a start as strong as this one, I look forward to seeing what we can accomplish in the new year. I hope employees look forward to it, as well." □

To view a recording and other materials from this event, visit **myWAPA, Programs, Integrated Communications Group, Open Mic**



If you are interested in presenting at a future Open Mic event, contact **openmic@wapa.gov** with your suggestion.



Forest Service partnership prevents outages

For the past several years, the U.S. has endured a series of devastating wildfires. Many of these took place during particularly active wildfire seasons, but others – such as the Marshall and Middle Fork fires in Colorado, which started in late December 2021 – did not.

According to the Environmental Protection Agency, data compiled by the National Interagency Fire Center beginning in 1983 shows that “the extent of area burned by wildfires each year appears to have increased since the 1980s.” They also indicated that the peak of the U.S. wildfire season has gradually moved earlier into the year, and that the 10 most active wildfire years in terms of acreage burned have all occurred since 2004.

More information is available at
[epa.gov/climate-indicators/
climate-change-indicators-
wildfires](https://epa.gov/climate-indicators/climate-change-indicators-wildfires)



These events pose an increasing threat to life, property and infrastructure, and WAPA takes them seriously.

In September 2021, the organization partnered with the Forest Service to reduce the threat of wildfire ignitions from transmission lines while minimizing the potential for power outages in the Rocky Mountain region.

The partnership involved new permits that allow WAPA to perform improved vegetation management along 275 miles of transmission lines on Forest Service-managed lands in Colorado and Nebraska. The permits allow WAPA to decrease hazards and improve reliability by allowing modern, efficient removal of trees and brush, which in turn reduces or eliminates threats to facilities and mitigates rights-of-way fuel-load conditions.

"WAPA had the right to have transmission lines on Forest Service lands, but they were authorized by different methods," explained Realty Specialist **Kenny Trueax**. "These were sometimes one-page letter agreements from the 1950s, sometimes a Memorandum of Understanding and sometimes more-modern Special Use Authorizations. Further, the Forest Service philosophy and vegetation management differed each time we entered a different forest."

A lack of uniformity in these various agreements caused difficulty and delay when getting approvals to conduct maintenance.

"In some cases, we had to draft and get approval of line-specific Operations and Maintenance plans before vegetation work could begin," he said.

The new permits help provide adequate access for maintenance, protect the public and ensure worker safety, while minimizing impacts to the environment. Well-maintained rights of way around power lines can

even assist firefighters by acting as fire breaks.

One massive benefit of the new permits is that they will allow WAPA to act much more quickly to perform vegetation management.

"We estimate that this new O&M plan will save up to 90 days of administrative approval time, so vegetation crews can begin as soon as enough snow melts that they can get in," Trueax said.

The new permits also further reduce the potential for transmission-line ignition or damage during wildfires by providing a standardized framework for utility maintenance activities. These actions help protect the natural and cultural environment, reduce the threat of wildfires and provide better road and trail access to transmission lines.

Getting to this point has been a lengthy process.

"The push for the new permits and O&M plan was underway for the past year and a half, and the right-of-way permits were a process that started in April 2021," explained Trueax. "Getting everything finalized has a significant impact on how WAPA will be able to prepare for and respond to situations that might have led to service interruptions in the past."

The new permits allow for WAPA to take action, based on four categories of perceived disturbance.

"The first category covers routine vegetation management, such as brushing and limbing with hand tools," he said. "It also covers day-to-day operations, such as patrols with utility task vehicles and helicopters. This new arrangement serves as National Environmental Policy Act clearance for activities in this category. The requirement is that we meet with the Forest Service annually, in the off season, to discuss our list of planned work, best practices, access and other logistics."

The next two categories cover work that requires additional review by the Forest Service, but even this will represent a reduction in time; within 30 days, the Forest Service will review and either approve WAPA's work plan, suggest additional conditions

or provide the organization with next steps.

"The fourth work category is emergency work," continued Trueax. "This recognizes the 24/7 nature of keeping the lights on and allows WAPA to respond to imminent threats to outages or safety. We respond and notify the Forest Service within a prescribed time."

These categories – with firm definitions, timelines and expectations – allow WAPA to manage vegetation with minimal delay and proactively reduce the risk of wildfires to transmission lines.

RM hasn't wasted any time when it comes to performing maintenance under this new arrangement.

"We put in the request to perform vegetation clearing for the full right-of-way width on the Blue River-to-Gore Pass and Gore Pass-to-Hayden transmission lines," Trueax said. "Those alone span three separate forest districts: the Medicine Bow-Routt National Forests, the White River National Forest and the Arapaho & Roosevelt National Forests. With the new permits, our crews already have permission to work and will start doing so as early in the year as possible. We will also have our first annual meeting under this plan in early 2022."

Trueax is optimistic that this represents a significant step forward for the reliability of service that WAPA – and RM in particular – provides to customers.

"The key to success of the plan, I think, will be the participation of both agencies in the annual meetings," he said. "Maintenance, Lands and Environment leaders planning and executing the work will get to engage with the decision makers at the Forest Service, all in one meeting."

He was particularly pleased to report that the agreement standardizes, for the first time ever, something that will greatly benefit customers, the grid and the public in general.

"We don't have to operate in a grey area," Trueax concluded. "That makes all the difference." □

Note: Eric Barendsen and Steven Webber contributed to this story.

Get to know SN's regional manager

In 2019, **Sonja Anderson** was selected as senior vice president and Sierra Nevada regional manager. In this capacity, she leads more than 190 federal employees and 50 contractors in marketing and delivering reliable, cost-based federal hydropower from the Central Valley and Washoe projects to millions of consumers in northern and central California.



Closed Circuit sat down with Anderson to learn more about her and her background.

What brought you to WAPA initially?

For full transparency, my move to WAPA was truly for work-life balance.

I had four young school-aged children at home, and I was working full time for the Bureau of Reclamation in midtown Sacramento while living in Folsom. Between taking the kids to my parents' house about 45 minutes away and then another 30 minutes to the office both ways, I felt that commuting almost three hours a day with me was no way for my children to live.

From Reclamation, I had heard of this agency in Folsom that managed the power from our facilities. That was all I knew about WAPA, but I knew something had to change for my family. I heard that there was an Information Technology manager position open at WAPA and, while it was a lateral move, it did not have nearly the influence and responsibility that I had at Reclamation.

It was a hard choice to make, but I took the leap for my family. It became absolutely the best career decision

I ever made. I was respected for my knowledge and experience, and I was offered opportunities at WAPA that I can't imagine I would have ever gotten at Reclamation. In addition, WAPA demonstrated significantly more flexibility for a mom trying to balance both work and kids.

What has been your most rewarding experience at WAPA so far?

I have had so many opportunities at WAPA, it is hard to narrow it down to one. I think being given the opportunities to move into jobs that I felt were way out of my lane was one of the most rewarding experiences for me.

Having gotten my education in IT, I loved driving new technologies into the organization and thought IT would be my entire career. But once I started learning more about what WAPA did, I realized I wanted to expand my experience. I was given the chance to become the Power Marketing manager.

My experience with the Power Marketing team taught me what our mission really was and gave me the passion for taking care of our customers that I carry with me to this day. Then, one day, my boss said he wanted to cross-train managers and was asking to switch several of us. He asked if I would move into Maintenance.

I admit, Maintenance was not an area I ever considered, but after thinking about it for a while, I decided that it would be interesting to see how Maintenance interfaced with Power Marketing and vice versa. Maintenance was a very different culture than Power Marketing, but I enjoyed every moment with that team as well.

What I learned in Maintenance was how critical the work of craft employees, Engineering and the rest of the support staff are in ensuring that our assets are maintained and that our employees operate safely.

The one thing that stands out the most to me was the passion that the crews have in their craft and the integrity they show to make sure their work is precise. They are true craftsmen.

In each of these jobs, I found a passion and a love for the mission and

learned so much from all the professionals I worked with. I am grateful for all of the experiences I had on each team.

What is something most people do not know about you?

Recently, I got a new puppy. Roxie is a Bernedoodle mix. She is the sweetest, goofiest dog I have ever had.

I am currently working with a professional trainer to give her a good start as a wonderful family member, but the longer-term goal is that, working with the trainer, Roxie and I will learn agility training courses for competition.

I figure it will be fun for her, build a relationship between us and provide an adventure that will allow us to meet new people with similar interests.

What are you reading right now? Do you have a favorite author?

I guess this is the place where I'm supposed to say that I'm reading the latest and greatest self-help book but, I admit, my guilty pleasure is suspenseful macabre books, such as ones by Stephen King.

Probably even worse to admit: If you give me a good streaming series to watch, I will schedule a Saturday to connect with my twins at the University of California, San Diego and binge watch all day.

What are your communication and leadership styles?

I think my team would say that I am an inclusive leader and communicator. I am comfortable making a decision on the fly when I need to, and I can revisit it when I am given more information. But if we have the luxury of discussion and inclusion on a topic, my preference will always be to include all of the impacted stakeholders.

I have been accused of being too inclusive because, at times, groups can get large when I include all stakeholders. When addressing a topic, issue, project or problem, I feel strongly that all impacted staff should be involved. Sometimes that involvement is just to learn what is going on with the project, so that everyone is more aware of their impact. Other times, it is because the staff member has expertise and they

need the opportunity to contribute to the topic.

Would you tell us about your coworkers at home?

With my twins back to school finally, from the pandemic, it is now just my husband, Roxie and Cooper, my senior rescue dog.

Cooper is a sweet dog who may have had a bad life before us. He has always had anxiety issues and has a bit of a weight problem. People tell me that he looks like the footstool from the Disney *Beauty and the Beast* movie, but he has always been a loyal family member and is questioning my choice in adding Roxie.

My husband loves the stock market and will go on for hours talking about it with anyone who wants to discuss. He is also an avid tennis player and was a great dad in raising our four kids.

During this period of maximum telework, what do you think is the most valuable lesson you've learned as a leader?

The lesson that stands out to me throughout this telework situation is that, in times of crisis, the leaders will emerge based on their skills and knowledge.

I would like to use this opportunity to mention the Dispatch supervisors and **Carl Dobbs** as a prime example of this lesson. As we were trying to find our way in the beginning of the pandemic, I was most concerned about the safety of the crew members and Dispatch employees who needed to continue the mission. As we were exploring ways to secure the building to protect Dispatch from exposure, the Dispatch managers jumped in and took the lead.

They did this by tracking the entry of staff into the building, setting up the office for safe distancing, ensuring we had the cleaning supplies and masks needed and developing the processes and procedures for a possible sequester, including conducting a sequestration pilot on behalf of WAPA and the Department of Energy.

I am very grateful for those leaders in Dispatch who stepped up when WAPA needed them, and I will take this moment to thank them once again.

□



Summarizing 2021 hydrology conditions

Editor's note: The following report summarizes data from WAPA's Hydropower Conditions webpage for straight power purchase costs, which are based solely upon hydrology, actual hydropower generation and related generation shortages. Readers may review all data by visiting wapa.gov, **Power Marketing, Hydropower Conditions**



ne of the biggest challenges for hydropower is water variability due to intermittent drought and flooding. By definition, hydropower needs water to generate electricity. Without it, WAPA must buy power on the open market from other sources to meet contractual obligations to its customers. This is referred to as purchased power.

In an ideal year, snowpack around the West is average or above average, yielding snowmelt runoff to recharge reservoirs behind the dams and powerplants that provide the power WAPA markets. Federal dam owners such as the Bureau of Reclamation, the Army Corps of Engineers and the International Boundary and Water Commission move water to federal hydroelectric powerplants.

WAPA markets the subsequent power generated to around 700 preference customers. Its customers, in turn, sell that power to more than 40 million Americans.

Water around WAPA in 2021

WAPA's actual generation was 80% of average in water year 2021, for a total generation of 21,916 gigawatt-hours. For the same period, total purchased power was 3,976 GWh with actual purchase power expenses of \$250,236,417 equating to \$62.93 per megawatt-hour.

The Colorado River Storage Project Management Center projected most probable purchase power expenses for water year 2021 to be \$57,140,561. Actual purchase power

expenses were a bit lower, at \$50,722,378. The cost per MWh was \$41.07.

Lake Powell ended the water year with an elevation of about 3,545 feet, or 155 feet from maximum reservoir level and 55 feet from the minimum generation level. The storage volume for Lake Powell was 7.3 million acre-feet at the end of September, or about 30% of capacity.

Extreme drought throughout the Colorado River Basin has resulted in about 181,000 acre-feet of additional water being released from Upper Colorado River Basin reservoirs to try to maintain Lake Powell elevation above 3,525 feet. However, even with additional releases from upstream reservoirs, Lake Powell is expected to drop below 3,525 feet. Consequently, additional releases from these reservoirs are being considered.

Desert Southwest's hydrology is mostly dependent on the Colorado River Basin snowpack and precipitation above Lake Powell. The region's most probable projected purchase power expenses were \$31,965,259. Actual purchase power expenses were lower, at \$25,518,630, with a cost per MWh of \$100.43.

NET GENERATION

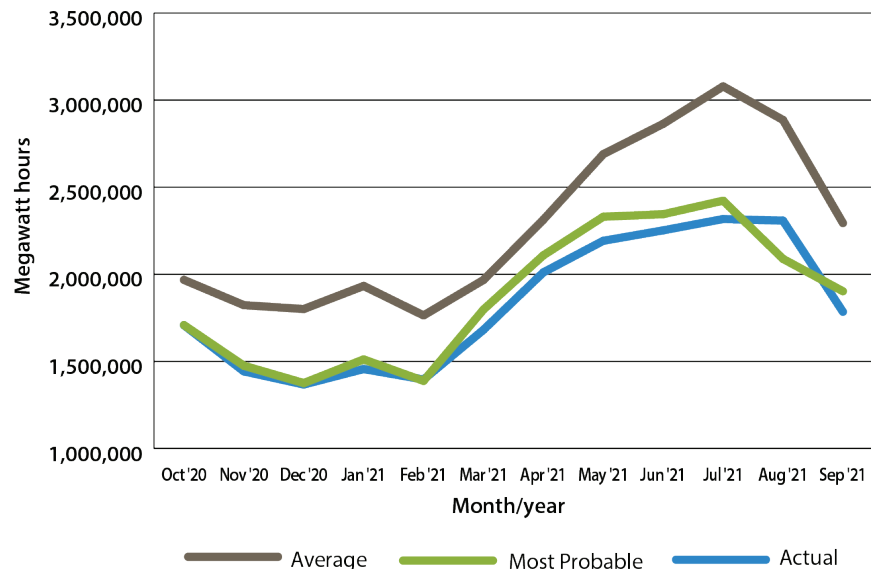
21,916

gigawatt-hours

80%

of average

Water Year 2021 Hydropower Generation Average vs. Most probable vs. Actual



Lake Mead elevation at the end of September was around 1,068 feet, or about 117.8 feet above the minimum generation elevation for Hoover Dam. The total side inflow into Lake Mead for water year 2021 was 593,000 acre-feet, which represents a 31% decrease from the previous year and 46% of the normal annual side inflow.

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave and Havasu, was 11.2 million acre-feet at the end of September, or 39% of the Lower Basin capacity.

In Rocky Mountain, at the end of September, reservoir inflows were 67% of average and reservoir storage was 99% of average. The most probable projected purchase power expenses were \$13,382,848, but actual purchase power expenses were notably higher at \$23,247,676. The cost per MWh was \$39.26.

Sierra Nevada ended the water year with 54% of the 15-year average reservoir storage for Trinity, 47% for Shasta, 53% for Folsom and 66% for New Melones. Accumulated inflow for the same date was 32% of the 15-year average for Trinity, 52% for Shasta, 35% for Folsom and 36% for New Melones. The region began water year 2021 with a most probable projection of purchase power of \$6,009,783 but ended with a significantly higher actual expense of \$18,846,261. The cost per MWh was \$31.48.

In Upper Great Plains, extreme drought conditions are occurring in most of North Dakota, northwest South Dakota and northeastern Montana, with some exceptional drought conditions in northcentral Montana and North Dakota. Severe and moderate drought as well as abnormally dry conditions are present in much of the lower half of South Dakota.

The yearly runoff forecast for the Missouri River basin as of Nov. 1 was 15.4 million acre-feet, or 58% of average.

Runoff above Sioux City for October was .92 MAF, or 75% of average. System storage as of Nov. 23 was 43.4 MAF. The region's most probable projection for purchase power was \$23,562,864. Actual purchase power expenses were \$131,901,472. The cost per MWh was \$101.75.

Average purchase power amounts and prices for the year were skewed by the extreme pricing and increased purchasing during the polar vortex on Feb. 15-16, with UGP significantly exceeding its purchase power estimates for the year in only February.

Anticipating water year 2022

The Seasonal Drought Outlook provided by the National Weather Service's Climate Prediction Center in November 2021 predicted persistent drought throughout the western United States. Additional significant drought development is also predicted in states such as Arizona, Colorado, Kansas, New Mexico, Oklahoma and Texas.

The predictions show drought conditions improving in the northwest, such as in Idaho, Oregon, Washington and Wyoming.

The NWS emphasized that its predictions are made in accordance with large-scale trends, which are based on "subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts." They emphasize caution and regular checking of updated drought predictions. □

For more information...

Visit the National Weather Service's Climate Prediction Center at cpc.ncep.noaa.gov



The psychological safety of resilience

By Paul Robbins

P psychological safety is important because it helps protect against underlying actions that can lead to physical illness and injury.

How we cope with and adapt to adversity in our daily lives is critical to our mental safety. A quote attributed to the Greek philosopher Epictetus says, "It's not what happens to you, but how you react to it that matters."

Resilience

Resilience is the ability to respond effectively to the challenges we face and recover quickly. Those who lack resilience often feel vulnerable and helpless, while those who have it feel more optimistic and hopeful.

In times of increased stress and anxiety, it is important to our psychological safety that we try to counter these negatives with the optimism and hope of resilience.

Stress

"Stress is the physical or mental response to an external cause," according to the National Institute of Mental Health. "A stressor may be a one-time or short-term occurrence, or it can happen repeatedly over a long time."

Stress trips an alarm in our brains that reacts in a preprogrammed biological way. The nervous system is awakened, hormones are released, senses are sharpened, muscles tense and pulse quickens.

This temporary “fight or flight” response is helpful if we are threatened; however, continued and extended amounts of stress can be unhealthy if left unchecked.

Ongoing stress can tear the body down biologically, affecting how it defends and repairs itself, which can lead to a compromised immune system and risk of illness. It can be linked to headaches, upset stomachs and chronic health issues, such as cardiovascular disease and musculoskeletal disorders.

Unresolved stress also keeps our minds in an aggravated mental state that can disrupt mood and sleep; contribute to depression, anxiety and other psychological disorders; and affect personal relationships and job performance.

Anxiety

Generally, anxiety is an internal reaction to stress. It can manifest itself as a feeling of dread or apprehension that interferes with daily life. It can even be constant when there is no immediate threat.

Anxiety breeds fear, uncertainty, excessive worry, tension, uneasiness and high blood pressure.

Anxiety and stress also pose the added risk of drug and alcohol abuse, or even suicide, when left unchecked. They also serve as distractions in the workplace. They can lead to errors and injury, especially if working with heavy equipment and other high-risk jobs.

Keep engaged and grounded in the moment, concentrate on the task at hand, practice situational awareness and avoid distractions. Watch out for others and use safety precautions, such as self-checking your work, using a buddy-check system or addressing project-specific hazards during tailgate meetings or Job Hazard Analysis briefings.

Take care of yourself

As big as a problem might seem, sometimes it's the little things that make a difference when you feel stressed or anxious. Remember the power of resilience and build upon it by being aware of your own needs and feelings and cultivate them.

What hobbies and activities do you enjoy? Take time for yourself. Read a

Other tips for building resilience

- **Be proactive.** Don't ignore problems or challenges. Take action, make a plan and consider what should be done to overcome the obstacle. It might take time to recover from a setback or traumatic event; however, recovery will be easier if you understand that the situation can improve if you address it directly.
- **Be hopeful.** Don't worry about past events that cannot be changed. Be hopeful, look to the future and accept change. This will help you adapt to new challenges and view them with less anxiety.
- **Make your day meaningful.** Do things that give you a sense of purpose and accomplishment each day. Set meaningful goals that help you look forward and lean in to life.
- **Connect.** Develop positive, strong relationships with friends and loved ones who can offer you acceptance and support. You can do the same with others by volunteering for a cause.
- **Learn from experience.** Take note of how you have coped with past hardships and what worked. What skills and strategies helped you through difficult times? Write in a journal about past and present experiences to help you identify behavior patterns, both positive and negative, that will help guide your future behaviors.

book, take a walk, listen to music or do anything that relaxes your mind and body. You can also practice stress management and relaxation exercises, such as deep breathing, yoga, guided imagery or meditation.

Most importantly, don't forget the basics: exercise, get enough sleep and eat healthy. All of these activities will help alleviate stress and anxiety while keeping you balanced.

Employee Assistance Program

If you try to find balance and still find it hard to achieve, consider using the services of the Employee Assistance Program.

The EAP was created to support employees and management in challenging times by developing an empowered workplace. The program offers short-term confidential counseling to employees. If you need to talk, there is a specially trained professional who is ready to help just a phone call away. The EAP website also provides a variety of psychological safety tools and tutorials to help you get through.

Resilience in the face of adversity is a proactive way to beat stress and anxiety. It also will strengthen your psychological safety by building hope and optimism which, in turn, will protect your physical safety.

Remember, “It's not what happens to you, but how you react to it that matters.” □

Note: The author is a technical writer who works under the Cherokee Nation Strategic Programs contract. Information in this article is adapted from that provided by the National Institute for Occupational Safety and Health, the National Institute of Mental Health, the Mayo Clinic and saif.com

For more information on EAP:

- Call **800.869.0276** 24/7 for toll-free assistance.

- Log in to espyr.com/ **signin** with the password **DOEFEDEA**



Reflecting on the benefits of mentoring

By Sarah P.



In January, Leadership Development launched the WAPA-wide Mentoring Program, welcoming 62 participants in its first cohort. I am incredibly passionate about mentorship, personally, and have had the pleasure of being both a mentor and a mentee. Even though I'm well into my career, I still find having a mentor incredibly important.

I've had mentors from both official and unofficial programs, and the outcome is the same, as they're the same type of people: individuals who want to help and guide others to their maximum potential. They have been incredible influences on my life. They've written stellar recommendations for me, one of which served as a reference for my current position; found and shared incredible opportunities; provided very frank feedback when I needed it; and been my biggest cheerleaders.

They are incredible people to have in one's life but, as we know, they are only half of the equation. A mentoring relationship can't occur without a willing mentee.

I was lucky enough to have mentoring programs to enroll in, and in some cases, I had to be brave enough to reach out and ask for help. There is a wealth of knowledge out there, and I've found that people are more than happy to share their experiences, thoughts and opinions. They can even ask you questions that you never considered before. At WAPA, I've never met a single person who wasn't willing to fill me in on something. That's part of the reason I love this organization so much. It's so easy to reach out, ask for and receive information.

When I joined WAPA, my prior government experience was solely on the military side of the Department of Defense. I could almost argue that my jump from government to private-sector civilian life was an easier

transition than into the Department of Energy civil service.

Each organization is different, but adjusting to being on a first-name basis with everyone in a government position was quite a big one. I'm still feeling out WAPA's culture after six months.

I can't tell you how excited I was for the opportunity to set up and run a mentoring program here at WAPA. I learned that Desert Southwest already had a similar program, and Program and Regulatory Advisor **Michelle Fink** shared a wealth of information that influenced the WAPA-wide program. How appropriate that this program was established in part via a mentoring relationship.

The WAPA-wide Mentoring Program is especially important now, considering the way the pandemic changed the workplace. There isn't much opportunity to encounter colleagues by chance, there aren't office lunches to attend and many individuals have been hired on during the pandemic without much chance to meet their colleagues in person. The WAPA-wide Mentoring Program aims to close that gap and overcome boundaries that may be present to connect individuals to one another.

Mentoring programs create mutually beneficial partnerships that build an organization's culture and strengthen professional networks. WAPA's program encourages participants to reach across regions and specialties.

“A mentor is not someone who walks ahead of you to show you how they did it. A mentor walks alongside you to show you what you can do.”

– Simon Sinek

To find a mentor, participants must register a profile online. From there, they can match based on job, location, current and past job experience, knowledge, skills, abilities and what they're hoping to achieve.

The program offers two types of mentoring relationships. The first is a traditional mentor-mentee relationship, in which a mentor offers professional guidance, and thus receives additional leadership experience and exposure to new and different views. The second is peer-to-peer mentoring, for those wishing to find someone to bounce ideas off of, walk through tough career choices with and more.

Participants have a multitude of resources available during the program, such as taking Strength Finders assessments and receiving follow-on coaching with the LDP's newly certified instructor, Program Manager **Troy Steadman**. The kick-off event included training on workplace mentoring, the power of vulnerability, how to create team standards and more.

While this program has just launched, participants have already had a wealth of useful experiences and interactions. Mentors and mentees will continue to meet each month for a minimum of one hour, choosing from a variety of special monthly LDP programs, Learning Nucleus courses and other media, such as books, videos and

articles. Topics include infrastructure, safety and hydropower.

Now that this program has launched, I can't help but be thankful for the people in this organization. We had so many individuals interested that we had to waitlist a few for the next cohort, which will begin in July.

However, that doesn't prevent individuals reading this from seeking out mentoring relationships outside of the program. Right now there are mentors waiting to be found and mentees waiting to be adopted both inside and outside of WAPA. Don't let your knowledge, or your quest for knowledge, go untapped.

Connection is what makes individuals and organizations great. The LDP's mission is to cultivate learning and leadership by developing authentic leaders who embody WAPA's core values and leadership competencies. With the willingness or, better yet, eagerness of WAPA employees to participate in mentorship, I truly believe this program will achieve that. □

Note: The author is a leadership development specialist.

For more information, visit **myWAPA, Programs, Leadership Development, WAPA-wide Mentoring Program**



Rapid Recaps

CIO serves as executive panelist

On Jan. 11, Senior Vice President and Chief Information Officer **Mike Montoya** served as a panelist at HMG Strategy's Washington D.C. CIO Executive Leadership Summit. Department of Energy CIO Ann Dunkin asked that he participate on her behalf on the Stimulating a Connected Culture to Compete in the Battle for Talent panel.

Panelists were asked to share their recommendations for fostering a "connected culture" and how it helps attract the skills that are needed for the organization to execute its mission.

As the only federal executive on the panel, Montoya discussed how he overcomes challenges in the federal technology hiring space and used the opportunity to dispel some common misconceptions about working in government.

He also shared specific actions that he takes to drive positive culture in WAPA's Information Technology program, citing a focus on recognition and celebration, providing ample training and development opportunities, remaining students of the business and encouraging collaboration across the organization.



508 Corner

By Nathan Alarid

Every month, WAPA's Section 508 team will provide tips and tricks to help employees ensure that their documents and web content are successfully compliant and accessible for those with disabilities. Remember: Before any content can be made public, it must be Section 508 compliant.

February's tips

Save documents in .docx format to preserve accessibility features. Other formats that can be produced by Microsoft Word – such as .rtf, .doc, .txt, and .odf – may not be accessible.

Develop reusable, accessible design templates to reduce the level of effort to create accessible electronic content.

Follow responsive design principles that support accessibility on different types of devices.

Advocate for the use of authoring tools and document converters that enable users to easily create accessible documents.

Where possible, upgrade existing tools, such as Microsoft Office or Adobe Acrobat, to the latest

version. This can provide authoring and evaluation features that make it easier to create accessible documents, as well as conformance to requirements for software-authoring tools in the Revised 508 standards.

WAPA's Section 508 Team

Launched by the Department of Energy, Public Affairs created a Section 508 team. This team identifies, establishes and provides guidance in Section 508 program management. The mandate under Section 508 enables the team to guide employees to conform electronic content to current Section 508 standards. □

Note: The author is a webmaster who works under the Wyandotte Services contract.

Visit **myWAPA, Departments, Public Affairs, Section 508** for resources to help you create, test and remedy the content you share online in compliance with Section 508 requirements. If you still have questions, contact **section508@wapa.gov**



Brief Transmissions

Monthly Download recordings available

The Power Marketing Administrations Human Resources Shared Service Center has made all of its Monthly Download recordings from 2019-2021 available through Learning Nucleus.

The Monthly Download series was developed to improve customer support and highlight important training topics, HR programs and policies that affect PMA employees. Sessions include demos, updates, Q&A segments and more.

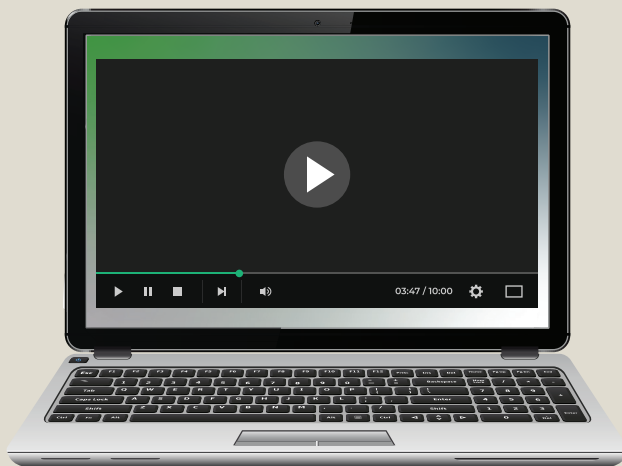
Access all Monthly Download recordings by visiting learningnucleus.energy.gov/course/index.php?categoryid=17792



HPI launches tool newsletter, videos

In January, the Human Performance Improvement and Just Culture Program launched a series of 12 HPI tools. As defined in the Department of Energy *Human Performance Handbook Volume 2*, the basic purpose of these tools is to help employees at every level throughout the organization maintain positive control of the task they are performing.

Each month, employees will receive a one-page newsletter and video, via email, explaining one of the tools.



The HPI Tools newsletters and videos will be posted to **myWAPA, Programs, Human Performance, HPI Tools** as they become available.



myWAPA sites are moving

The migration of myWAPA, WAPA's intranet site, to SharePoint Online is underway.

As sites move, between now and September, employees may get a "We've moved!" message on pages that they visit. The message will provide the link to the new address. Employees are encouraged to update any favorites or bookmarks as their frequently visited sites migrate.

Migrated sites will have a new look and feel, but the content will remain the same.



If you have questions, contact Denise Elkin via Teams or at delkin@wapa.gov



New VPN connection available

All WAPA employees now have access to a new VPN connection in their Cisco AnyConnect application: AlbRA1 – Albuquerque.

Employees are advised to use AlbRA1 as their connection, as it is on new, more robust hardware that offers better performance. AlbRA1 will replace GemRA1 – Germantown, but both will continue to be available for a short time during the transition.

Contact witcc@wapa.gov if the connection does not appear in your application or you experience connection difficulties.

